PSTricks

pst-hsb

Curves with continoues color; v.0.03

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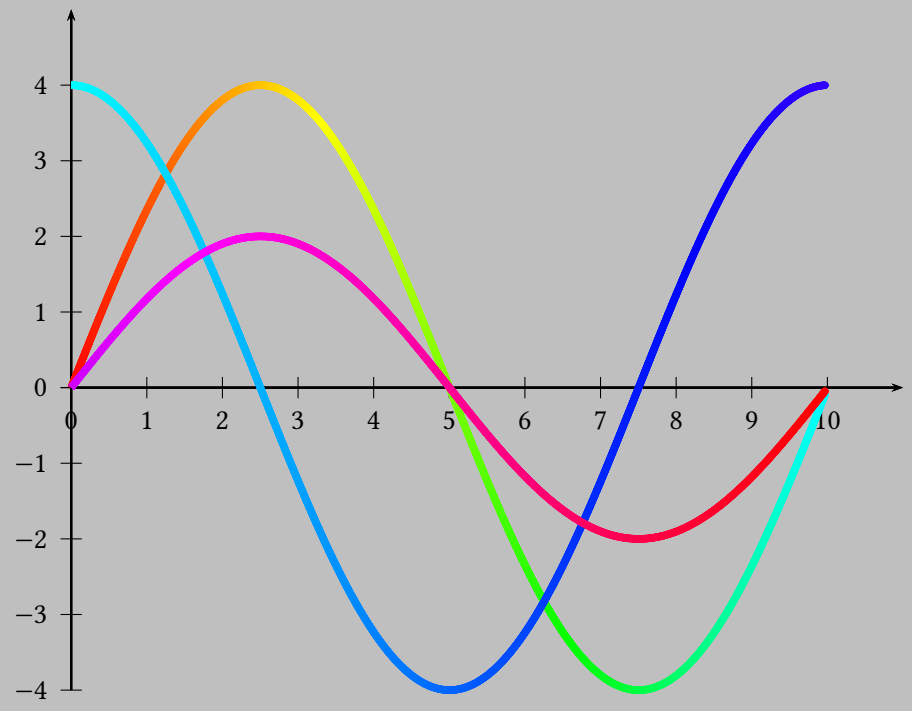

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This package defines the macros `\pslineHSB` `\parametricplotHSB` for curves with a continous color.

Contents

Thanks to:

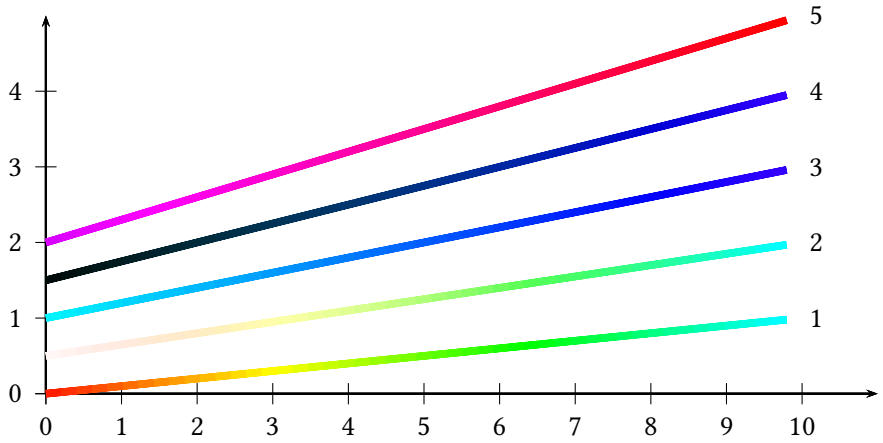
1 Options

The macros uses the hsb color model for the continuing setting of the colors. hsb is Hue, Saturation and Brightness. All three can be defined by the beginning and end value of the sequence. If the values for beginning and end are the same then the value will be constant for the whole line and/or curve. The options are preset to

```
HueBegin=0,HueEnd=1,
SaturationBegin=1, SaturationEnd=1,
BrightnessBegin=1, BrightnessEnd=1,
```

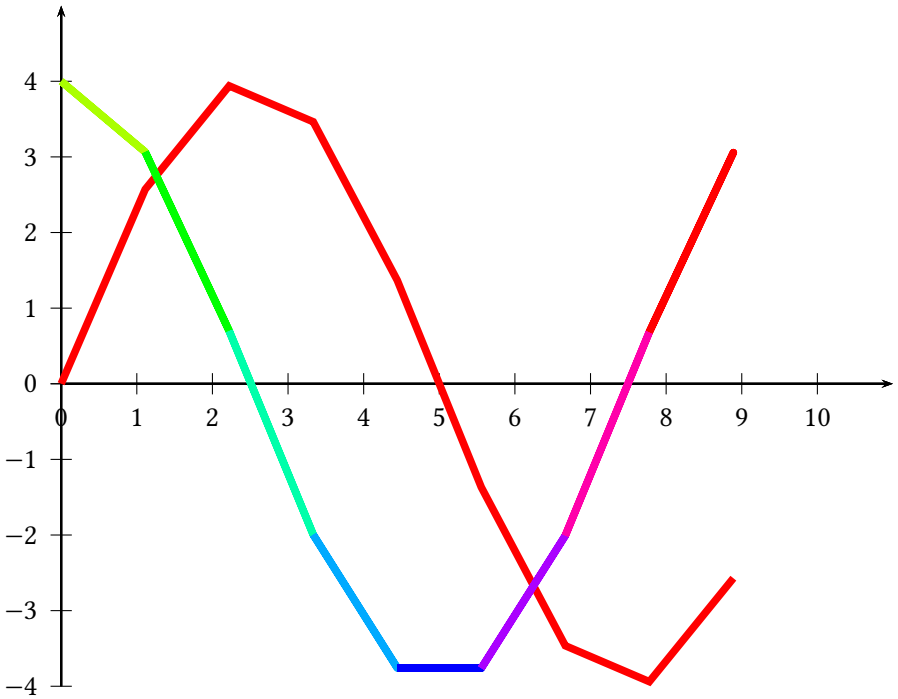
2 Examples

2.1 Lines

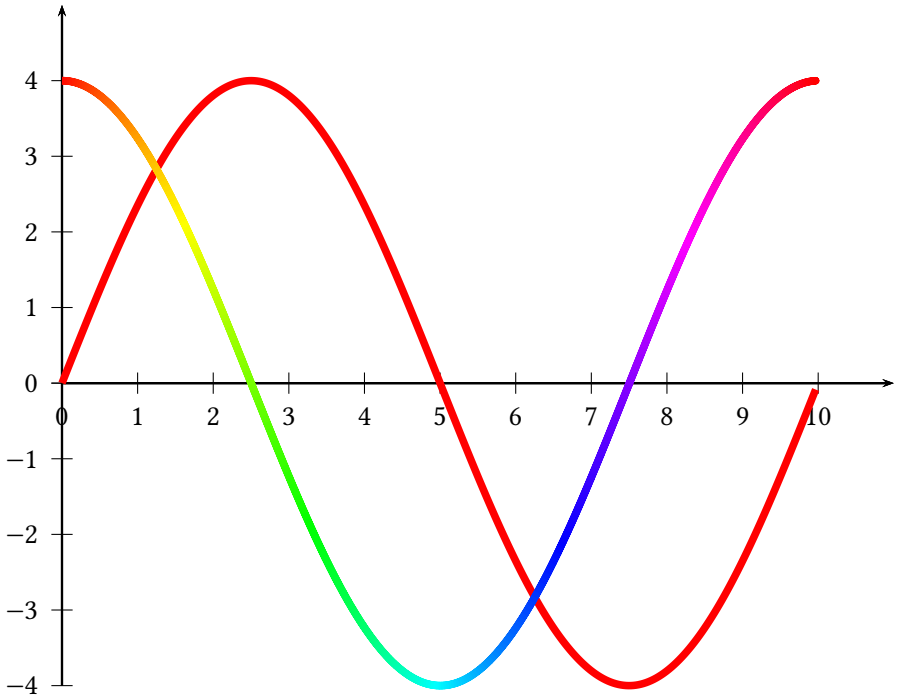



```
\begin{pspicture}(-0.5,-0.5)(11,5)
% \psgrid(0,-4)(10,4)
\psaxes{->}(0,0)(11,5)
\pslineHSB[linewidth=1mm,HueBegin=0,HueEnd=0.5](0,0)(10,1)\rput[l](10,1){ 1}
\pslineHSB[linewidth=1mm,HueBegin=0,HueEnd=0.5,SaturationBegin=0](0,0.5)(10,2)\rput[l](10,2){ 2}
\pslineHSB[linewidth=1mm,HueBegin=0.5,HueEnd=0.7](0,1)(10,3)\rput[l](10,3){ 3}
\pslineHSB[linewidth=1mm,HueBegin=0.5,HueEnd=0.7,BrightnessBegin=0](0,1.5)(10,4)\rput[l](10,4){ 4}
\pslineHSB[linewidth=1mm,HueBegin=0.8,HueEnd=1](0,2)(10,5)\rput[l](10,5){ 5}
\end{pspicture}
```

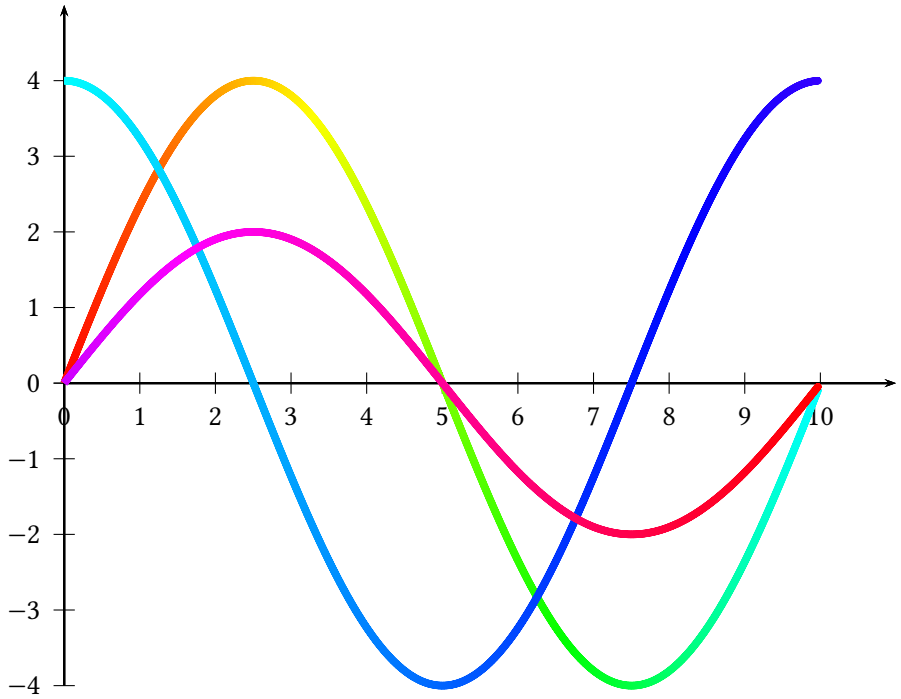
2.2 Parametric plot



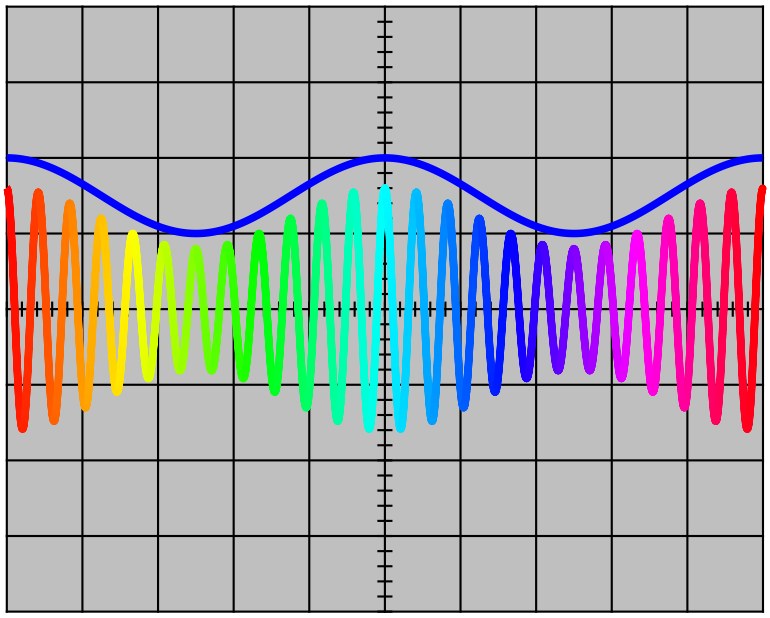

```
\begin{pspicture}(0,-5)(11,5)
% \psgrid(0,-4)(10,4)
\psaxes{->}(0,0)(0,-4)(11,5)
\psset{plotpoints=10}%
\psparametricplotHSB[linewidth=1mm,HSB=false,linecolor=red]{0}{360}{t 36 div t sin 4 mul}
\psparametricplotHSB[linewidth=1mm,algebraic]{0}{6.28}{t/0.628 | cos(t)*4}
\end{pspicture}
```




```
\begin{pspicture}(0,-5)(11,5)
% \psgrid(0,-4)(10,4)
\psaxes{->}(0,0)(0,-4)(11,5)
\psset{plotpoints=300}%
\psparametricplotHSB[linewidth=1mm,HSB=false,linecolor=red]{0}{360}{t 36 div t sin 4 mul}
\psparametricplotHSB[linewidth=1mm,algebraic]{0}{6.28}{t/0.628 | cos(t)*4}
\end{pspicture}
```




```
\begin{pspicture}(0,-5)(11,5)
% \psgrid(0,-4)(10,4)
\psaxes{->}(0,0)(0,-4)(11,5)
\psset{plotpoints=300,algebraic}%
\psparametricplotHSB[linewidth=1mm,HueBegin=0,HueEnd=0.5]{0}{6.28}{t/0.628 | sin(t)*4}
\psparametricplotHSB[linewidth=1mm,HueBegin=0.5,HueEnd=0.7]{0}{6.28}{t/0.628 | cos(t)*4}
\psparametricplotHSB[linewidth=1mm,HueBegin=0.8,HueEnd=1]{0}{6.28}{t/0.628 | sin(t)*2}
\end{pspicture}
```



```
\begin{pspicture}(-5,-5)(5,5)
 \psframe*[linecolor=lightgray](-5,-4)(5,4)
 \psgrid[gridlabels=0,subgriddiv=0](-5,-4)(5,4)
 \multido{\nxDiv=-5+0.2}{50}{%
 \psline(\nxDiv,-.1)(\nxDiv,0.1)}
 \multido{\nyDiv=-4.0+0.2}{40}{%
 \psline(-0.1,\nyDiv)(0.1,\nyDiv)}
 \psset{linewidth=1mm}%
 \psparametricplotHSB[plotpoints=2000,linecolor=blue,HSB=false,yunit=0.5]{-5}{5}{%
 /temps t 2e-3 mul def
 /frequence2 100 def
 frequence2 360 mul temps mul cos
 1 mul 3 add
 }
 \psparametricplotHSB[plotpoints=2000,yunit=1]{-5}{5}{%
 /temps t 2e-3 mul def
 /frequence1 1200 def
 /frequence2 100 def
 frequence2 360 mul temps mul cos
 1 mul 3 add
 frequence1 360 mul temps mul cos
 4 mul
 mul
 0.1 mul
 }
\end{pspicture}
```

3 List of all optional arguments for pst-hsb

Key	Type	Default
HueBegin	ordinary	[none]
HueEnd	ordinary	[none]
SaturationBegin	ordinary	[none]
SaturationEnd	ordinary	[none]
BrightnessBegin	ordinary	[none]
BrightnessEnd	ordinary	[none]
ColorBegin	ordinary	[none]
ColorEnd	ordinary	[none]
HSB	boolean	true

References

[1] Denis Girou. “Présentation de PSTricks”. In: *Cahier GUTenberg* 16 (Apr. 1994), pp. 21–70.

[2] Michel Goosens et al. *The LaTeX Graphics Companion*. 2nd ed. Reading, Mass.: Addison-Wesley Publishing Company, 2007.

[3] Alan Hoenig. *TeX Unbound: LaTeX & TeX Strategies, Fonts, Graphics, and More*. London: Oxford University Press, 1998.

[4] Nikolai G. Kollock. *PostScript richtig eingesetzt: vom Konzept zum praktischen Einsatz*. Vaterstetten: IWT, 1989.

[5] Frank Mittelbach and Michel Goosens et al. *The LaTeX Companion*. 2nd ed. Boston: Addison-Wesley Publishing Company, 2004.

[6] Herbert Voß. *PSTricks Grafik für TeX und LaTeX*. 7th ed. Heidelberg/Berlin: DANTE and Lehmanns, 2016.

[7] Herbert Voß. *PSTricks Graphics for LaTeX*. 1st ed. Cambridge: UIT, 2011.

[8] Timothy Van Zandt. *multido.tex - a loop macro, that supports fixed-point addition*. CTAN:/graphics/pstricks/generic/multido.tex, 1997.

[9] Timothy Van Zandt. *PSTricks - PostScript macros for generic TeX*. http://www.tug.org/application/PSTricks, 1993.

[10] Timothy Van Zandt and Denis Girou. “Inside PSTricks”. In: *TUGboat* 15 (Sept. 1994), pp. 239–246.

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